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Linking glacial, periglacial and paraglacial processes: the challenge of cold regions geomorphology

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High latitude and high altitude areas, here collectively called "cold regions", are the theatre of several geomorphological
processes that lead to the formation of a variety of landforms. Classically, in Geomorphology, these
processes are studied in three separate disciplines: glacial, periglacial and paraglacial geomorphology. However, the more these fields have evolved, the more it becomes evident that it is only from the integration of them into a common interdisciplinary approach that the geomorphology of cold regions can be fully understood. The overlaps between glacial, periglacial and paraglacial processes is evident both in time and space. Temporally, these processes overlap when, for instance, an active valley glacier could be found next to a rock glacier developing from a tributary valley and slope movements of previously-deposited lateral moraines could also be occurring along the flank of the same main valley. Spatially, glacial, periglacial and paraglacial geomorphology tend to affect the same regions (the cold regions of above). Moreover, their spatial overlap could be such that they link to each other. For instance, this would happen when an advancing glacier might override and somewhat incorporate a rock glacier. Or when paraglacial movements of previously deposited glacial sediments might feed a now-lowered valley glacier, thus determining an "anomalous" increase of glacier sediment discharge at the valley glacier margin.
In this paper we advocate a more integrated, interdisciplinary approach to the study of cold regions by presenting examples from the recent literature that show the importance of such an approach.